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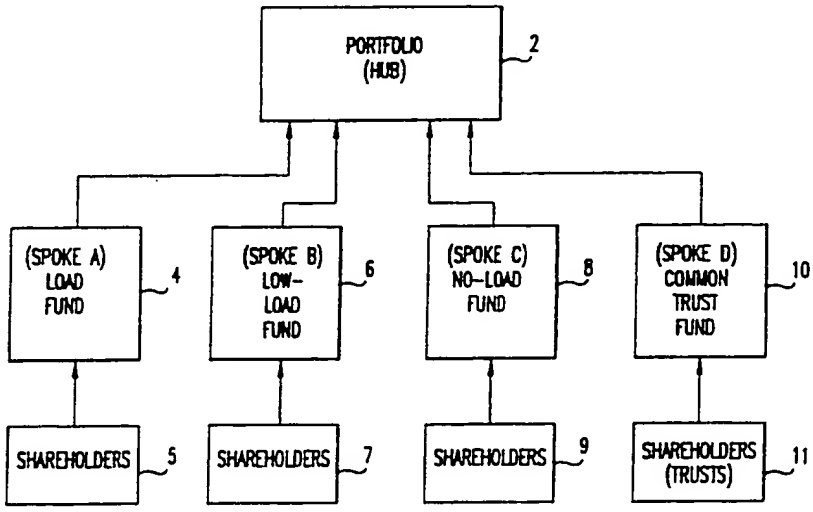
(54) Title: DATA PROCESSING SYSTEM AND METHOD FOR HUB AND SPOKE FINANCIAL SERVICES CONFIGURATION




(57) Abstract

A data processing system and method are provided for monitoring and recording the information flow and data, and making all calculations, necessary for maintaining a partnership portfolio and partner fund (Hub and Spoke) financial services configuration. In particular, the data processing system and method make a daily allocation of assets of two or more funds (Spokes) that are invested in a portfolio (Hub). The data processing system and method determine the percentage share (all cati n ratio) that each fund has in the portfolio, while taking into consideration daily changes both in the value of the portfolio's investment securities and in the amount of each fund's assets. The system and method also calculate each fund's total investments based on the concept of a book capital account, which enables determination of a true asset value of each fund and accurate calculation of allocation ratios between the funds. The data processing system and method also track all the relevant data, determined on a daily basis for the portfolio and each fund, so that aggregate year-end data can be determined for accounting and for tax purposes for the portfolio and for each fund.

# DATA PROCESSING SYSTEM AND METHOD FOR HUB AND SPOKE FINANCIAL SERVICES CONFIGURATION

## BACKGROUND OF THE INVENTION

Investment vehicles such as mutual funds have certain operating costs. To name just a few expenses, every fund, including institutional funds (whose investors are financial institutions), pays an investment advisory fee to an investment adviser who invests the fund's assets, custodian fees to a custodian for the safekeeping of the fund's assets, portfolio accounting fees for the determination of the fund's asset value and income, shareholder servicing fees to various entities which provide investors with information and services regarding the fund, an audit fee to the fund's independent accountants who review the fund's financial statements, and a legal fee for counsel to represent the fund and each of its independent trustees. A retail fund (one whose investors are largely individuals) incurs the same kinds of expenses as an institutional fund, although certain expenses, such as shareholder servicing fees and distribution (12b-1) fees, will be larger for a retail fund, since individual investors need more services than do sophisticated institutional investors.

Having a large amount of assets results in various economies of scale in fund operating costs. Since many of a fund's expenses are independent of the fund's asset base, a larger fund asset base produces a lower operating expense ratio (expenses to assets), which increases the net investment performance of the fund. Also, since larger funds purchase securities in larger denominations, they are able to bargain for higher yields (on bonds and other debt securities) or

portfolio. Its only investors are the funds, each of which invests 100% of its assets in the portfolio.

Although the portfolio may legally be a trust or other entity, it is considered to be a partnership for tax purposes. As a partnership, it receives "flow-through" tax treatment and, so, the portfolio does not pay taxes, but rather all economic gain or loss flows through to the portfolio investors. Mutual funds must rely on qualifying for "regulated investment company" ("RIC") status under the Internal Revenue Code (the "Code") to avoid taxation. The RIC provisions of the Code generally prevent mutual funds from investing in other types of funds and impede the division of a single mutual fund into multiple mutual funds. These RIC provisions also lead to economic distortions and inequities among shareholders which will be discussed below.

With the assets of two or more funds combined in the portfolio, the economies of scale described above can be more fully realized. The assets of different types of investment vehicles may now be commingled, resulting in more efficient and effective investment management. While all funds can benefit from Hub and Spoke services, a fund with a small amount of assets, which ordinarily would not be a viable fund because it would have a prohibitively high operating expense ratio, can now be established on a cost-effective basis by investing its assets in a portfolio. Investing in a portfolio also provides the new fund with an investment history, which makes the fund more attractive to investors. Therefore, a mutual fund sponsor can more efficiently organize a new mutual fund to be offered to customer markets which previously could not be economically accessed by that sponsor.

this disadvantage by more accurately matching economic and taxable income.

The partnership portfolio and partner fund configuration presents great administrative challenges. Because each of the partners in the portfolio is some type of fund, the assets of which change daily as customers make further investments or withdrawals, the partnership interest of each fund varies daily. For example, consider a portfolio made up of Funds A and B. Assume that at the start of the day Fund A has $750,000 invested in the portfolio and Fund B has $250,000 invested. The portfolio has $1,000,000 in assets with Fund A having a 75% share and Fund B having a 25% share. Next, assume that by the end of the day the portfolio has not changed in value due to market fluctuations, but that additional purchases by fund shareholders have given Fund A $800,000 in assets and Fund B $275,000 in assets. The portfolio has grown to $1,075,000 in assets, with Fund A having a 74.4% share and Fund B having a 25.6% share.

Further complexities arise as the value of the portfolio assets rise and fall or as additional funds invest in the portfolio (or as existing funds withdraw their investments entirely). Additionally, as in any mutual fund complex, many Hub and Spoke structures may be administered simultaneously. A new and unique data processing system and method is necessary to enable accurate daily allocations to be made among each of the funds in a portfolio. Also, each such daily allocation is comprised of various economic components--income, gain, loss, expenses. These various components must be isolated and aggregated, on a continual basis, for both non-tax accounting

On each fund's first day as a portfolio investor, or on the beginning of each fiscal year that a fund continues to participate in a Hub and Spoke configuration, its respective share ownership in the portfolio is determined by its relative percentage of the total dollar amount of investments in the portfolio. Thereafter, the fund's allocation percentage is adjusted through proper adjustments to the book capital account balances of the participating funds (which a data processing system according to the present invention determines daily). The respective fund book capital accounts, which change every day, continually indicate the accurate relative ownership of the portfolio by each fund. Each fund's book capital account will be either increased or decreased daily depending upon the following:

(a) increased by any capital contributions (purchases by fund shareholders) made by the fund to the portfolio;

(b) decreased by any distributions (including portfolio expenses and redemptions by fund shareholders) made to the fund by the portfolio;

(c) increased by any increase in net unrealized gains or decrease in net unrealized losses allocated to the fund;

(d) decreased by any decrease in net unrealized gains or increase in net unrealized losses allocated to the fund; and

(e) increased or decreased by the amount of profit (portfolio income) or loss (portfolio expenses), respectively, allocated to the fund.

A data processing system and method according to the present invention successfully determines each of these ever changing, and interrelated, accounts. By calculating the daily

capital gain or loss can be determined for accounting and for tax purposes for the portfolio and for each fund.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram representation of a partnership portfolio and partner fund (Hub and Spoke) financial services configuration.

FIG. 2 is an example of the operating expenses in maintaining a traditional two-fund configuration.

FIG. 3 is an example of the operating expenses in maintaining the two funds of FIG. 2 in a Hub and Spoke configuration.

FIG. 4 depicts an overview of the flow of information in the management of a Hub and Spoke configuration using a data processing system according to the present invention.

FIG. 5 depicts the flow of information through modules of software used in a data processing system according to the present invention.

FIG. 6 is a flowchart of a software routine for a main menu used in a data processing system according to the present invention.

FIG. 7 is a flowchart of a software routine for initializing a data disk used in a data processing system according to the present invention.

FIG. 8 is a flowchart of a software routine for daily allocation of assets between a portfolio and its funds used in a data processing system according to the present invention.

FIGS. 9A-C are a flowchart of a software routine for allocation of daily incremental activity used in a data processing system according to the present invention.

maintained in a traditional structure. Each has the following expenses: investment advisory fees, administrative fees, custody fees, custody transaction fees, portfolio accounting fees, legal fees, audit fees, trustees fees and expenses, shareholder servicing fees, 12b-1 expenses, organization expenses, and miscellaneous fees. The total cost is 57 basis points for institutional fund 20 and 103 basis points for retail fund 22.

An example of the same two funds in a Hub and Spoke structure is depicted in FIG. 3, which shows the expense profiles of the portfolio and each fund. Specifically, portfolio (Hub) 24 has the following expenses: investment advisory fees, administrative fees, custody fees, custody transaction fees, portfolio accounting fees, legal fees, audit fees, trustees fees and expenses, and miscellaneous fees. The investors in portfolio 24 are an institutional fund (Spoke A) 26 and a retail fund (Spoke B) 28. As with funds 20 and 22 in FIG. 2, institutional fund 26 has assets of $150 million and retail fund 28 has $100 million in assets.

Funds 26 and 28 pay the expenses of portfolio 24 in proportion to the percentage share (as determined by the book capital accounts) each holds in the portfolio, as shown on the line item "ALLOCATION OF HUB EXPENSES" for funds 26 and 28. In addition, each fund has the following expenses of its own: administrative fees, legal fees, audit fees, trustees fees and expenses, printing fees, shareholder servicing fees, 12b-1 expenses, organization expenses, and miscellaneous fees.

As FIG. 3 shows, in the Hub and Spoke financial services configuration such expenses as investment advisory fees, custody fees, custody transaction fees,

media may be used. Portfolio/fund accountant 48 rec ives information from and provides information to a general ledger 54 and a portfolio accounting system 56, both of which are computer programs of a type commonly used in accounting and which may be combined in a single software application. An integrated software package may combine software 50 with either or both of general ledger 54 and portfolio accounting system 56. Information from printed output 46 may be entered into general ledger 54 and portfolio accounting system 56 and then passed along to transfer agent 42. Portfolio/fund accountant 48 also provides information to and receives information from an investment advisor 58, who is responsible for investment decisions regarding the portfolio's assets.

Information on data disk 52 is transferred to a portfolio administrator 60. The Hub and Spoke management responsibilities of portfolio administrator 60 include issuing and maintaining software 50, periodically reviewing for errors in data submitted by portfolio/fund accountant 48, and calculating and processing data to obtain the year-end data for the portfolio and funds for tax and accounting purposes. Portfolio administrator 60 uses personal computer 44 running software 50 and capable of producing printed output 46. Typically, portfolio administrator 60 manages several separate Hub and Spoke configurations.

The information flow depicted in FIG. 4 may be accomplished in whole or in part by physical transfer of printed or computer-readable media, or over communication lines.

FIG. 5 depicts the information flow through modules of software 50, with the starting point of software 50 represented by block 70. When necessary, a user, typically portfolio administrator 60,

pr cessing system according to the preferred embodiment of the present invention. The system starts at block 100 and proceeds to block 104, where a main menu is displayed, for example, on the CRT of a personal computer. Entry point M as shown in block 102 is provided to allow other routines to return to the main menu routine.

The system next proceeds to block 106, where the user enters a one-letter menu choice. At block 108, the system determines whether a valid menu choice was entered. If not, the system returns to block 106 for the user to enter a menu choice; if so, the system proceeds to block 110. There, the system determines whether a Hub and Spoke allocation routine was selected by the user from the main menu. If so, the system proceeds to that routine via entry point A, shown in block 112; if not, the system proceeds to block 114. At block 114, the system determines whether a daily incremental activity routine was selected by the user. If so, the system proceeds to that routine via entry point B, shown in block 116; if not, the system proceeds to block 118. Here, the system determines whether an unrealized gain or loss activity routine was selected by the user. If so, the system proceeds to that routine via entry point C, shown in block 120; if not, the system proceeds to block 122. At that block, the system determines whether an initiate data disk routine was selected. If so, the system proceeds to that routine via entry point D, shown in block 124; if not, the system proceeds to block 126. At block 126, the system determines whether a year-end tax routine was selected. If so, the system proceeds to that routine via entry point E, shown in block 128; if not, then the user selected the choice to exit from the main

(Hub). Data regarding the Spoke assets is typically provided from general l dger 54, and may be entered into the system manually by the user or automatically via an interface between the system and the general ledger that will be apparent to those of skill in the art. General ledger 54 may also be integrated with the system as part of software 50.

Next, at block 154, the system displays the entries for the Spoke assets, and then prompts the user to indicate whether the entries are correct, as block 156 shows. If the user indicates that the entries are not correct, the system returns to block 152 to allow the user to enter the Spoke assets data again; if the entries are correct, the system proceeds to block 158. As shown there, the system creates four files on the data disk: (1) a prior day file, which stores data for the prior day's total investments for the portfolio and each fund; (2) a current day file, which stores data for the adjusted total investments for the Hub and each Spoke and the allocation ratios (percentage each of the Spokes holds in the Hub, as determined by the book capital accounts); (3) a daily incremental activity file, which stores data for the income, expenses, and net realized gain or loss for the Hub; and (4) a tax file, which stores all daily activity data for computing aggregate year-end income expenses, and capital gain or loss for the Hub and each Spoke. The data stored for each day in the tax file includes the adjusted total investments for the Hub and Spokes; the daily incremental income, expenses, and net realized gain or loss for the Hub; the daily net unrealized gain or loss for the Hub and the Spokes; and the allocation ratios for each Spoke.

The system next goes to block 160, where a disk check file is created on the data disk and a disk

i.e., whether the proper data disk 52 is being used for one particular Hub and Spoke configuration as opposed to another Hub and Spoke configuration that may be administered by a portfolio/fund accountant 48. This is preferably done by comparing the check disk value retrieved from the check disk file with a check disk value in the code of software 50. If the two values do not match, the data disk is not correct, and the system proceeds to block 184, where an error message is displayed, and then returns to the main menu routine via entry point M, at block 102. If the two values do match, the data disk is correct, and the system proceeds to block 186.

At block 186, the system retrieves the pricing date from the date file. Next, the system goes to block 188, where the system queries the user to determine whether the pricing date is correct. If so, the system proceeds to block 194; if not, the system goes to block 190 to allow the user to enter the pricing date, then to block 192, in order to update the date file, and then to block 194.

As shown at block 194, the system allows the user to enter the stock activity (purchases and redemptions) that each Spoke experienced the previous day. This information is received from transfer agent 42, and may be entered manually or by means of a computer in a way that will be apparent to those of skill in the art. The system next displays the entries, at block 196, and asks the user whether the entries are correct. If not, the system returns to block 194; if so, the system proceeds to block 200.

At block 200, the system retrieves the prior day's total investments from the prior day file. At block 202, the system uses the prior day total investments and the stock activity entries to

main menu routine via entry point M, at block 102. If the data disk is correct, the system proceeds to block 236.

At block 236, the system retrieves the pricing date from the date file. Next, the system goes to block 238, where the system queries the user to determine whether the pricing date is correct. If so, the system proceeds to block 244; if not, the system goes to block 240 to allow the user to enter the pricing date, then to block 242, in order to update the date file, and then to block 244.

As block 244 shows, the system asks whether the user would like to retrieve prior daily incremental activity entries. It may be, for example, that the user previously ran the daily incremental activity routine to enter the incremental income and expenses, but not the incremental net realized gain or loss. If the user has made no prior entries and thus does not wish to retrieve any data, the system proceeds to block 252. If the user does wish to retrieve data, the system proceeds to block 246, where daily incremental activity entered prior to the current pass through this routine is retrieved from the daily incremental activity file. The system then displays the prior entries, at block 248, and then asks whether the user wishes to modify any of the entries (which would include entering any of them for the first time), as shown at block 250. If not, the system proceeds to block 258; if so, the system goes to block 252.

At block 252, the user may enter data for the daily incremental income, expenses, and net realized gain or loss for the portfolio. (It should be noted here that expenses incurred solely by the funds are accounted for in general ledger 54 or portfolio

returns to block 284 for the user to enter a submenu choice; if so, the system proceeds to block 288. There the system determines whether the user selected the submenu choice to exit. If so, the system returns to the main menu routine via entry point M, as shown in block 102; if not the system proceeds to the next step.

At block 290, the system retrieves the disk check value from the disk check file. At block 300, the system determines whether the data disk is correct. If not, the system proceeds to block 302, where an error message is displayed, and then returns to the main menu routine via entry point M, at block 102. If the data disk is correct, the system proceeds to block 304.

At block 304, the system retrieves the pricing date from the date file. Next, the system goes to block 306, where the system queries the user to determine whether the pricing date is correct. If so, the system proceeds to block 312; if not, the system goes to block 308 to allow the user to enter the pricing date, then to block 310, in order to update the date file, and then to block 312.

As block 312 shows, the system prompts the user to enter the net unrealized gain or loss for the portfolio, and the user's estimate of the end of day Hub assets. This information is typically provided from portfolio accounting system 56 and may be entered into the system manually or automatically as described above for general ledger 54. The user's estimate of the end of day portfolio assets serves as an error checking device. The system next displays the entries, at block 314, and then asks the user, at block 316, whether the entries are correct. If so,

realized gain or loss for the portfolio; the daily net unrealized gain or loss for the portfolio and funds; and the allocation ratios for each of the funds. The system then returns to the main menu routine via entry point M, as block 102 shows. Data may also be transferred to general ledger 54, either manually or automatically.

FIG. 11 is a flowchart for a year-end tax routine. The purpose of this routine, which implements module 86 of FIG. 5, is to process and calculate aggregate year-end data for the Hub and its Spokes for tax and accounting purposes. Starting at entry point E, shown in block 128, the system proceeds to block 342, where a submenu is displayed. The system next proceeds to block 344, where the user enters a one-letter submenu choice. At block 346, the system determines whether a valid submenu choice was entered. If not, the system returns to block 344 for the user to enter a submenu choice; if so, the system proceeds to block 348. There the system determines whether the user selected the submenu choice to exit. If so, the system returns to the main menu routine via entry point M, as shown in block 102; if not the system proceeds to the next step.

At block 350, the system retrieves the disk check value from the disk check file. At block 352, the system determines whether the data disk is correct. If not, the system proceeds to block 354, where an error message is displayed, and then returns to the main menu routine via entry point M, at block 102. If the data disk is correct, the system proceeds to block 356.

At block 356, the system retrieves the year-end tax data that the system has been storing in the tax file each day. The system then asks, at block 358, if

What is claimed is:

1. A data processing system for managing a financial services configuration of a portfolio established as a partnership, each partner being one of a plurality of funds, comprising:

(a) computer processor means for processing data;

(b) storage means for storing data on a storage medium;

(c) first means for initializing the storage medium;

(d) second means for processing data regarding assets in the portfolio and each of the funds from a previous day and data regarding increases or decreases in each of the funds' assets and for allocating the percentage share that each fund holds in the portfolio;

(e) third means for processing data regarding daily incremental income, expenses, and net realized gain or loss for the portfolio and for allocating such data among each fund;

(f) fourth means for processing data regarding daily net unrealized gain or loss for the portfolio and for allocating such data among each fund; and

(g) fifth means for processing data regarding aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds.

2. A data processing system as claimed in claim 1, wherein said first means further comprises:

(a) means for inputting and storing on the storage medium pricing date data;

(b) means for inputting and storing on the storage medium data regarding assets of each fund;

4. A method as claimed in claim 3, wherein said third means further comprises:

(a) means for verifying that the storage medium is correct by retrieving from the storage medium the value identifying the storage medium;

(b) means for retrieving from the storage medium the pricing date data and for allowing the pricing date data to be corrected if necessary;

(c) means for allowing retrieval from the storage medium of any previously input data regarding daily incremental income, expenses, and net realized gain or loss;

(d) means for inputting and for storing on the storage medium the data regarding daily incremental income, expenses, and net realized gain or loss;

(e) means for retrieving from the storage medium the data regarding adjusted total investments and allocation ratios; and

(f) means for computing data representing pre-pricing assets for the portfolio and each of the funds.

5. A data processing system as claimed in claim 4, wherein said fourth means further comprises:

(a) means for verifying that the storage medium is correct by retrieving from the storage medium the value identifying the storage medium;

(b) means for retrieving from the storage medium the pricing date data and allowing the pricing date data to be corrected if necessary;

(c) means for inputting data representing net unrealized gain or loss for the portfolio;

(d) means for retrieving from the storage medium the data regarding adjusted total investments and allocation ratios;

(a) a first step of initializing a storage medium for use in the data processing system, said first step being performed on an as needed basis;

(b) a second step of processing data regarding assets in the portfolio and each of the funds from a previous day and data regarding increases or decreases in each of the funds' assets and allocating such data among each fund, said second step being performed on a daily basis;

(c) a third step of processing data regarding daily incremental income, expenses, and net realized gain or loss for the portfolio and for allocating such data among each fund, said third step being performed on a daily basis;

(d) a fourth step of processing data regarding daily net unrealized gain or loss for the portfolio and for allocating such data among each fund, said fourth step being performed on a daily basis;

(e) a fifth step of processing data regarding aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds, said fifth step being performed on a yearly basis.

8. A method as claimed in claim 7, wherein said first step further comprises the steps of:

(a) inputting and storing on the storage medium pricing date data;

(b) inputting and storing on the storage medium data regarding assets of each fund;

(c) storing on the storage medium a value identifying the storage medium; and

(d) creating locations on the storage medium for storing data regarding:

(i) a previous day's total investments for the portfolio and each of the funds;

(b) retrieving from the storage medium the pricing date data and allowing the pricing date data to be corrected if necessary;

(c) allowing retrieval from the storage medium of any previously input data regarding daily incremental income, expenses, and net realized gain or loss;

(d) inputting and storing on the storage medium the data regarding daily incremental income, expenses, and net realized gain or loss;

(e) retrieving from the storage medium the data regarding adjusted total investments and allocation ratios; and

(f) computing data representing pre-pricing assets for the portfolio and each of the funds.

11. A method as claimed in claim 10, wherein said fourth step further comprises the steps of:

(a) verifying that the storage medium is correct by retrieving from the storage medium the value identifying the storage medium;

(b) retrieving from the storage medium the pricing date data and allowing the pricing date data to be corrected if necessary;

(c) inputting data representing net unrealized gain or loss for the portfolio;

(d) retrieving from the storage medium the data regarding adjusted total investments and allocation ratios;

(e) retrieving from the storage medium the data regarding daily incremental income, expenses, and net realized gain or loss;

(f) retrieving from the storage medium the data representing breakage accumulation;

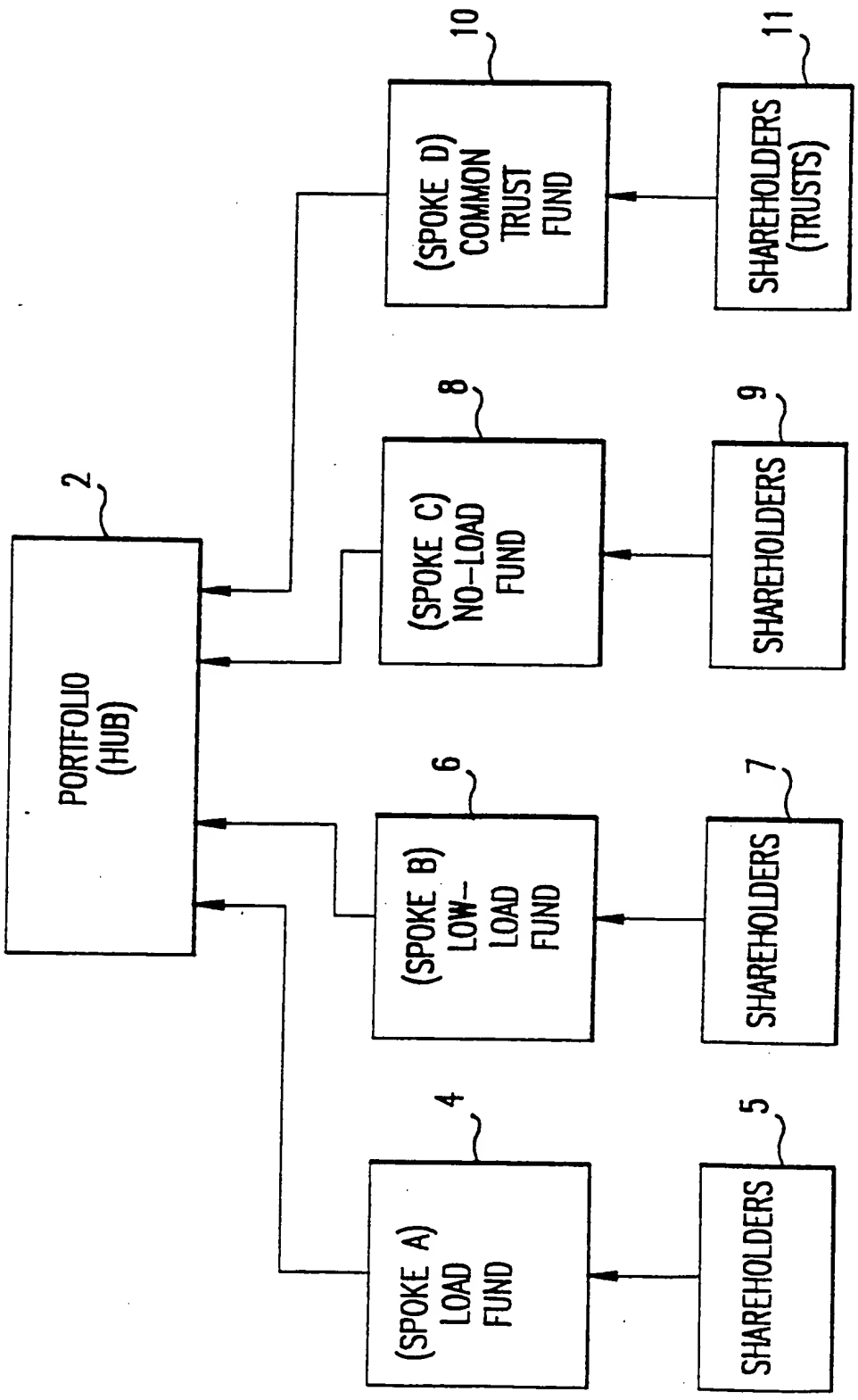

PORTFOLIO (HUB)
2
(SPOKE A) LOAD FUND
4
SHAREHOLDERS
5
(SPOKE B) LOW-LOAD FUND
6
SHAREHOLDERS
7
(SPOKE C) NO-LOAD FUND
8
SHAREHOLDERS
9
(SPOKE D) COMMON TRUST FUND
10
SHAREHOLDERS (TRUSTS)
11

FIG. 1

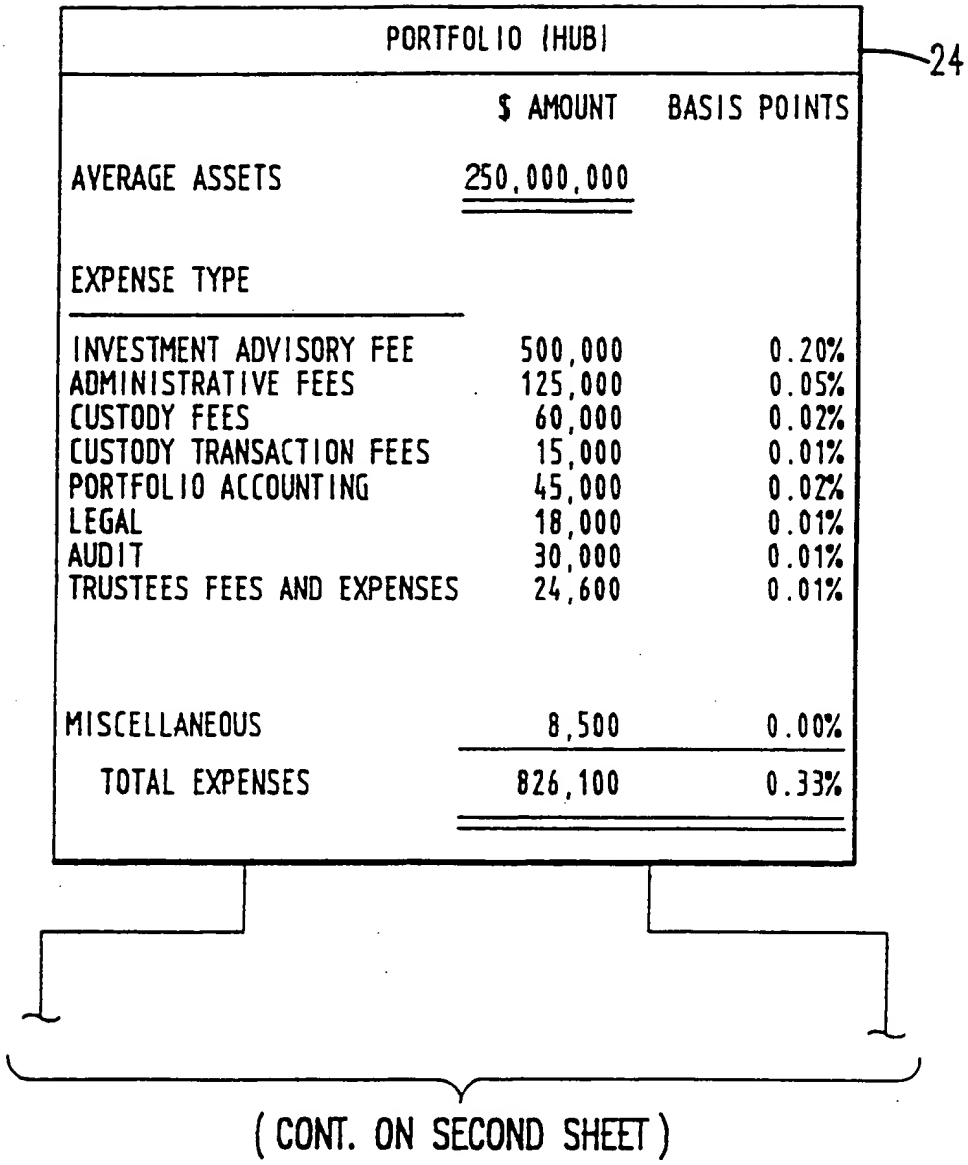

PORTFOLIO (HUB)
24
$ AMOUNT
BASIS POINTS
AVERAGE ASSETS
250,000,000
EXPENSE TYPE
INVESTMENT ADVISORY FEE 500,000 0.20%
ADMINISTRATIVE FEES 125,000 0.05%
CUSTODY FEES 60,000 0.02%
CUSTODY TRANSACTION FEES 15,000 0.01%
PORTFOLIO ACCOUNTING 45,000 0.02%
LEGAL 18,000 0.01%
AUDIT 30,000 0.01%
TRUSTEES FEES AND EXPENSES 24,600 0.01%
MISCELLANEOUS 8,500 0.00%
TOTAL EXPENSES 826,100 0.33%
(CONT. ON SECOND SHEET)

FIG.3

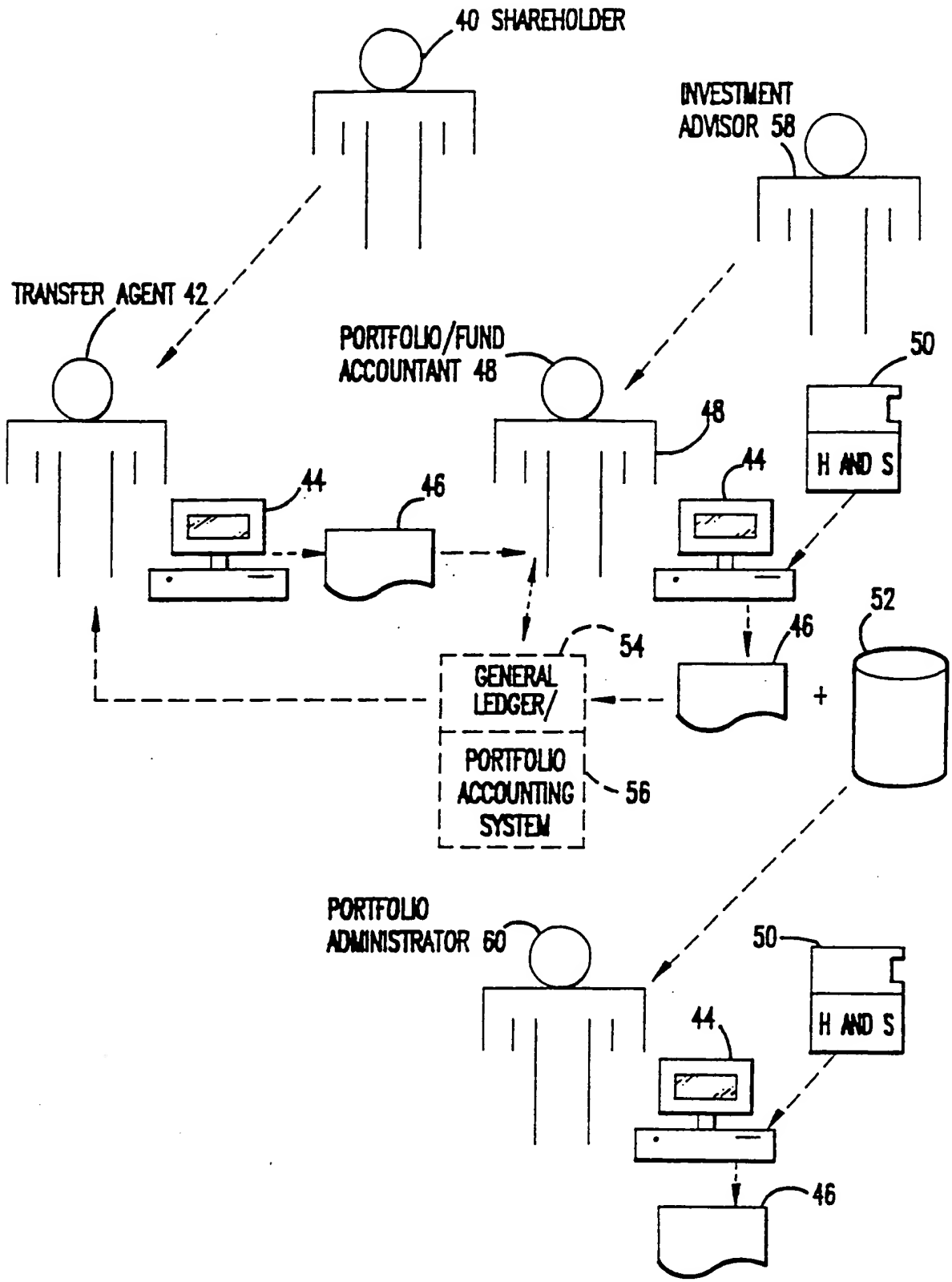
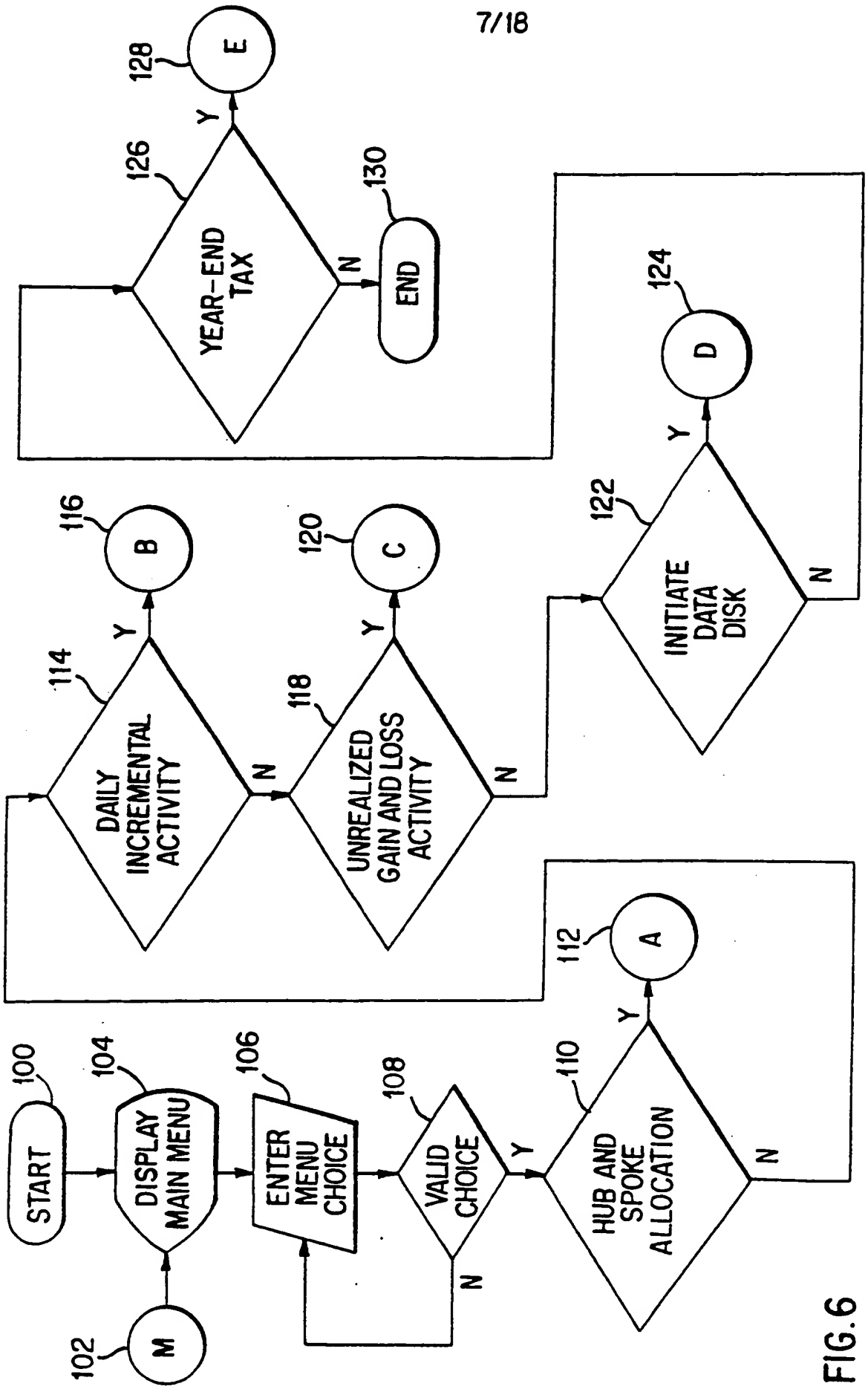

40 SHAREHOLDER
INVESTMENT ADVISOR 58
TRANSFER AGENT 42
PORTFOLIO/FUND ACCOUNTANT 48
48
50
H AND S
44
46
44
52
54
GENERAL LEDGER/
46
+
PORTFOLIO ACCOUNTING SYSTEM
56
PORTFOLIO ADMINISTRATOR 60
50
H AND S
44
46

FIG.4


100
START
104
DISPLAY MAIN MENU
106
ENTER MENU CHOICE
108
VALID CHOICE
110
HUB AND SPOKE ALLOCATION
112
A
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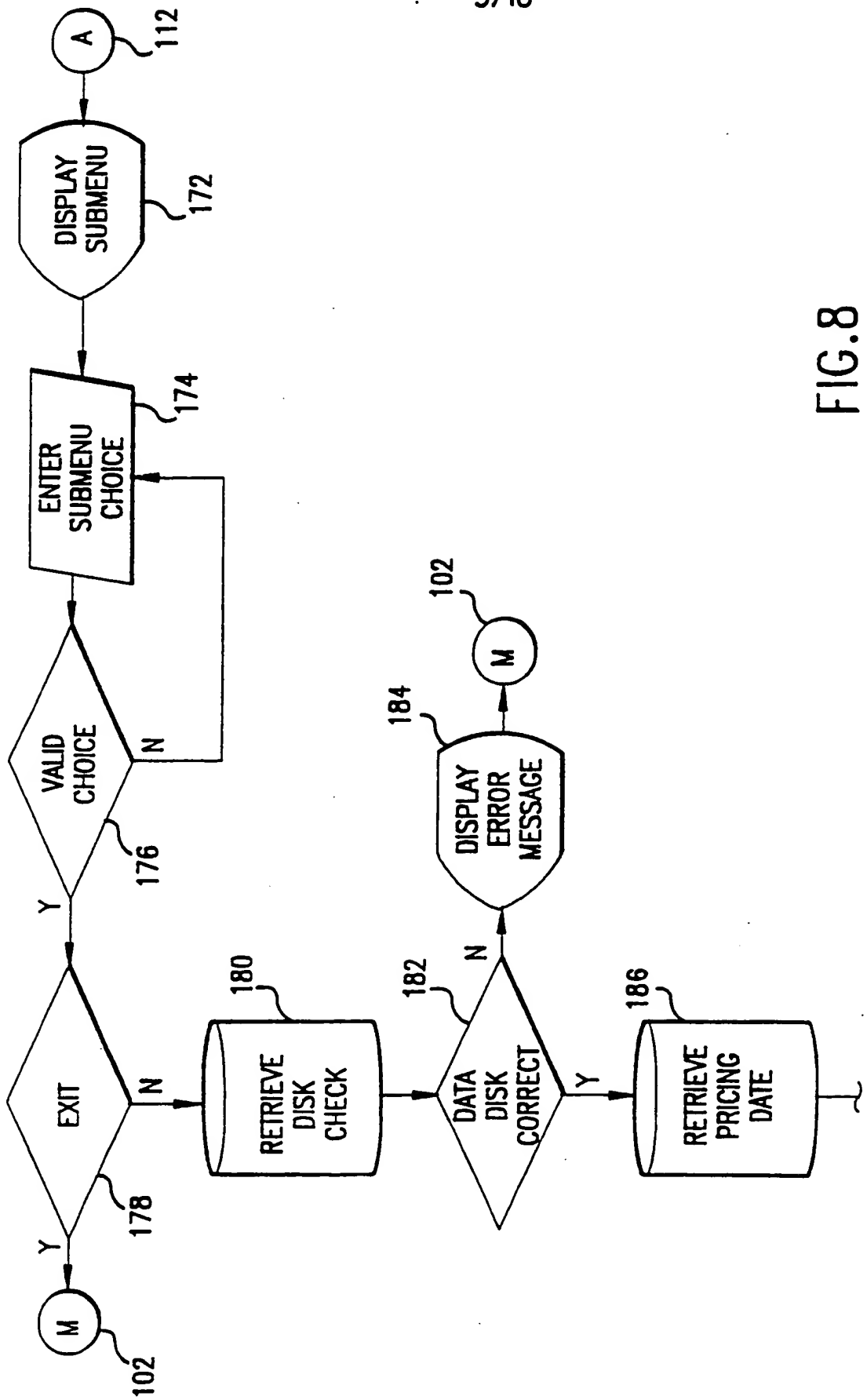
DAILY INCREMENTAL ACTIVITY
116
B
118
UNREALIZED GAIN AND LOSS ACTIVITY
120
C
122
INITIATE DATA DISK
124
D
126
YEAR-END TAX
128
E
130
END
102
M
Y
N

FIG.6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112
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VALID CHOICE
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EXIT
178
N
Y
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RETRIEVE DISK CHECK
180
DATA DISK CORRECT
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DISPLAY ERROR MESSAGE
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M
102
RETRIEVE PRICING DATE
186
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FIG.8

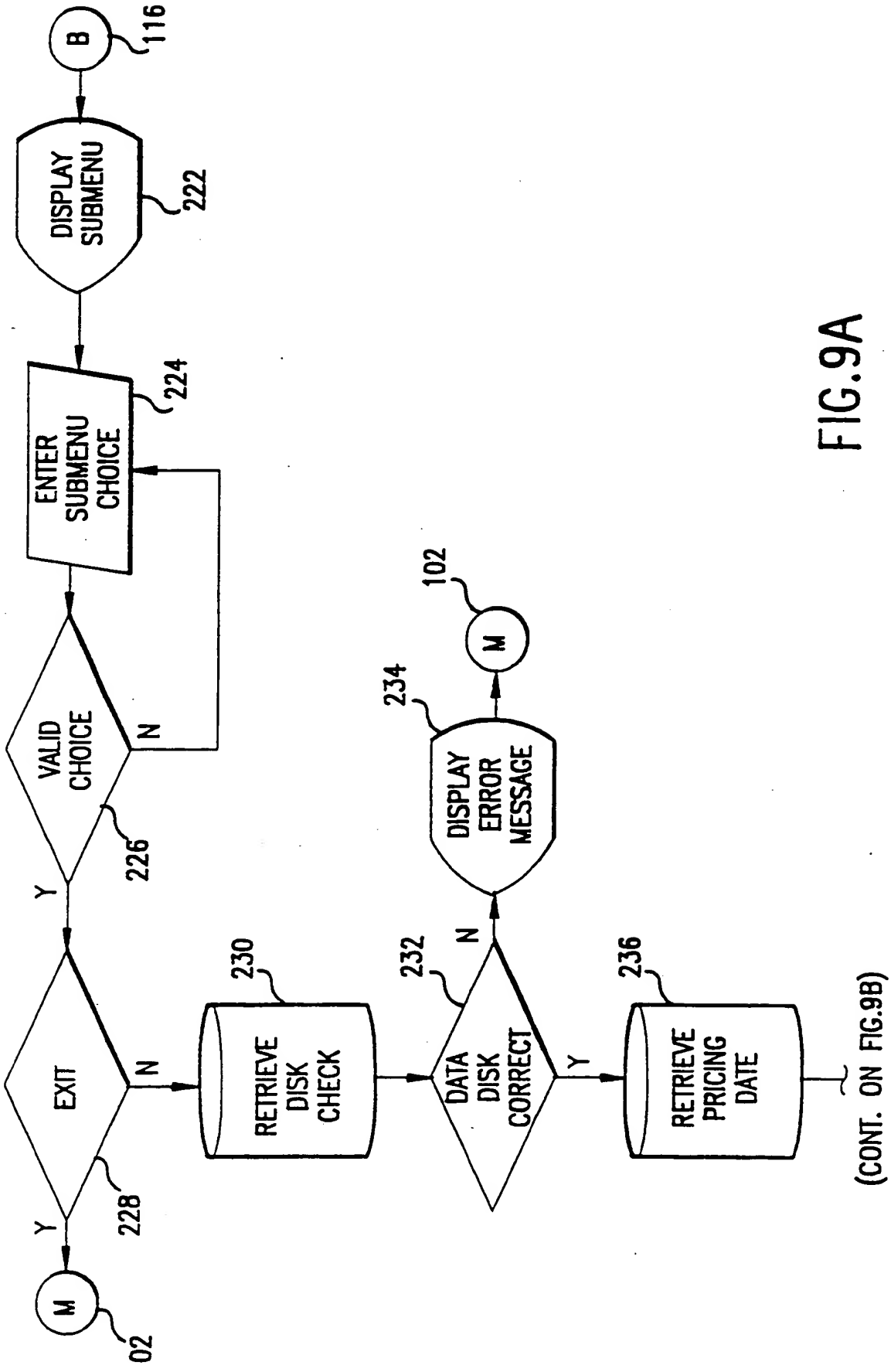
B
116
DISPLAY SUBMENU
222
ENTER SUBMENU CHOICE
224
VALID CHOICE
226
N
Y
EXIT
228
N
Y
M
02
RETRIEVE DISK CHECK
230
DATA DISK CORRECT
232
N
Y
DISPLAY ERROR MESSAGE
234
M
102
RETRIEVE PRICING DATE
236
(CONT. ON FIG.9B)

FIG.9A

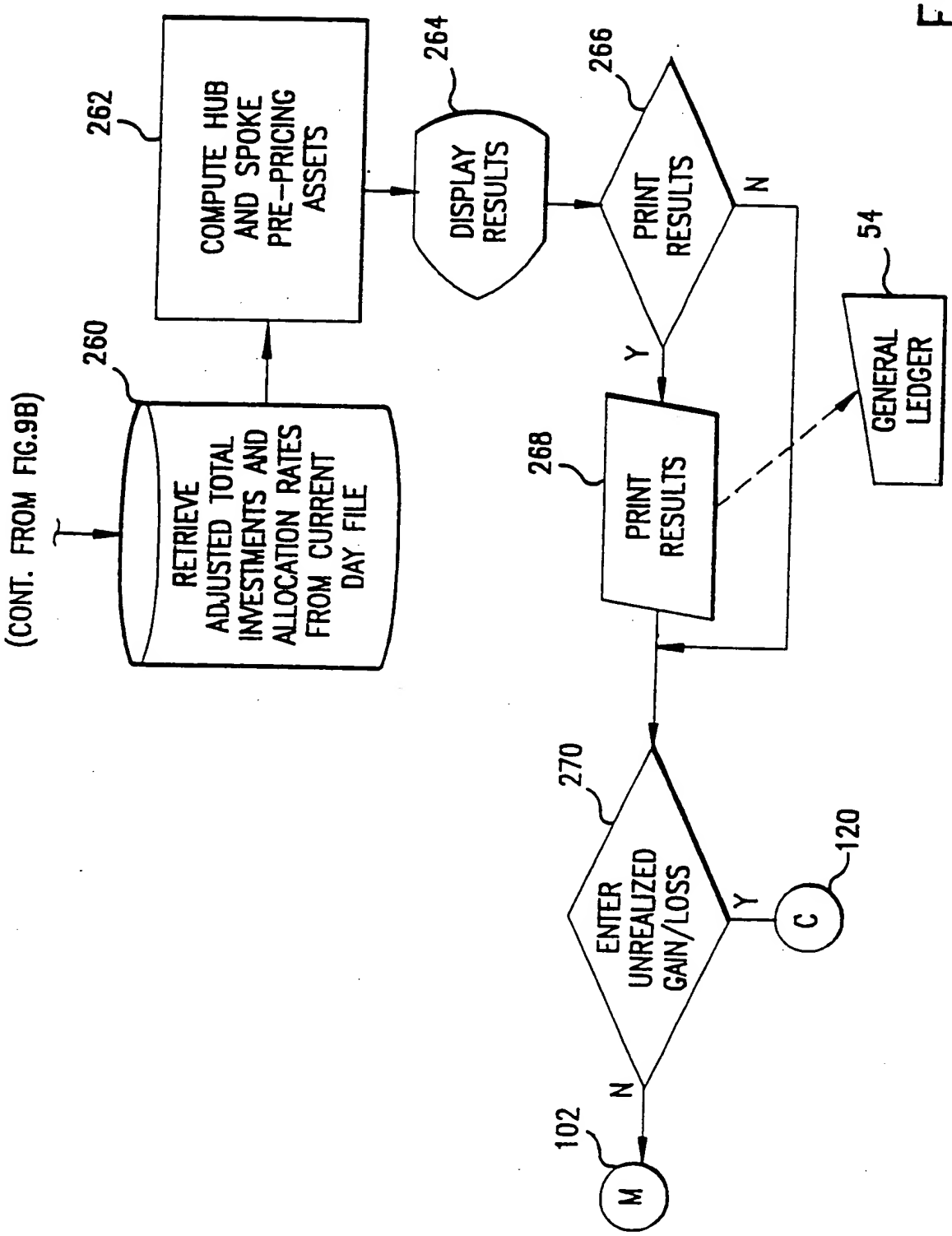
(CONT. FROM FIG.9B)
260
RETRIEVE ADJUSTED TOTAL INVESTMENTS AND ALLOCATION RATES FROM CURRENT DAY FILE
262
COMPUTE HUB AND SPOKE PRE-PRICING ASSETS
264
DISPLAY RESULTS
266
PRINT RESULTS
N
Y
54
GENERAL LEDGER
268
PRINT RESULTS
270
ENTER UNREALIZED GAIN/LOSS
Y
120
C
N
102
M

FIG.9C

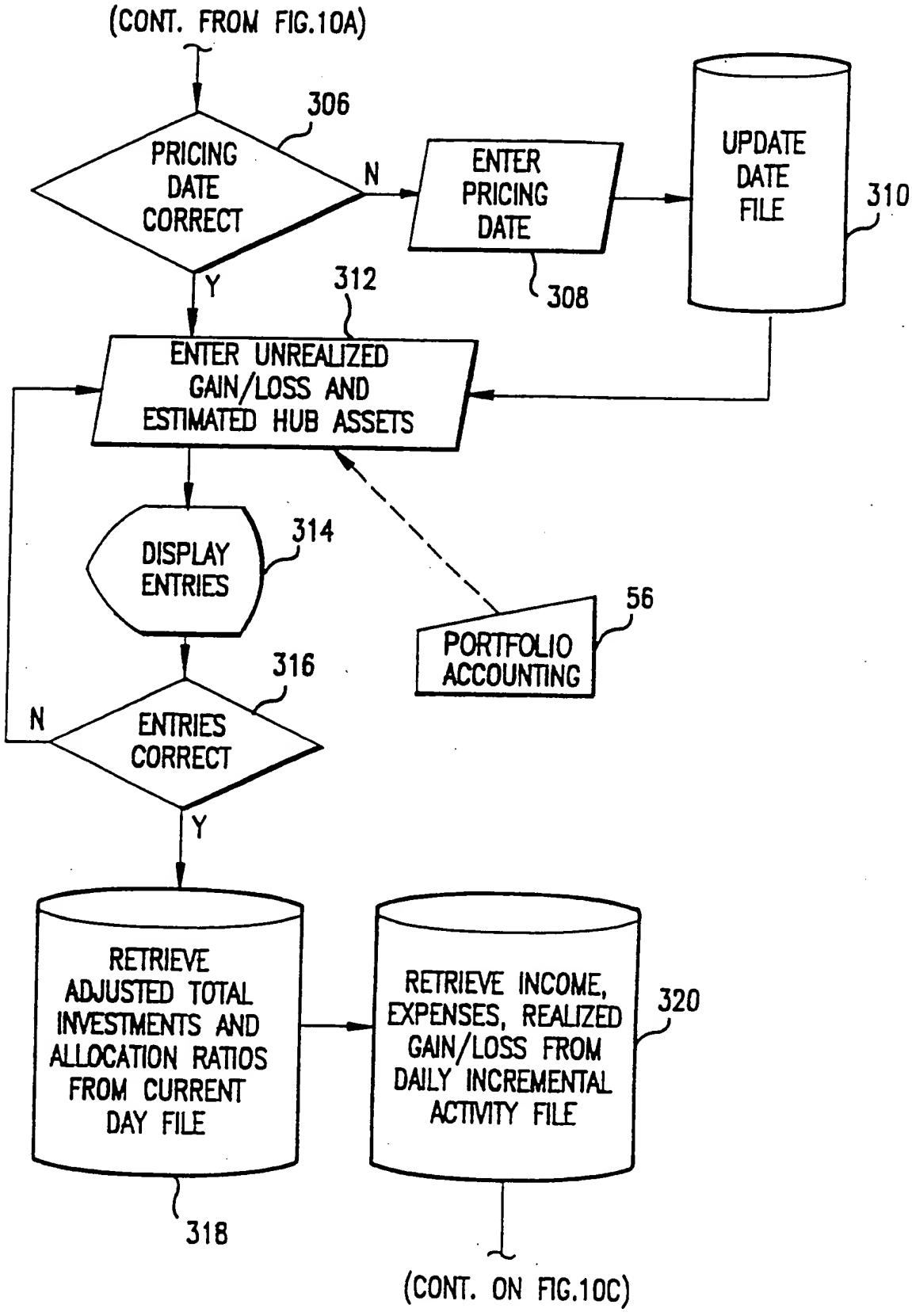
(CONT. FROM FIG.10A)
306
PRICING DATE CORRECT
N
ENTER PRICING DATE
308
UPDATE DATE FILE
310
Y
312
ENTER UNREALIZED GAIN/LOSS AND ESTIMATED HUB ASSETS
DISPLAY ENTRIES
314
56
PORTFOLIO ACCOUNTING
316
N
ENTRIES CORRECT
Y
RETRIEVE ADJUSTED TOTAL INVESTMENTS AND ALLOCATION RATIOS FROM CURRENT DAY FILE
318
RETRIEVE INCOME, EXPENSES, REALIZED GAIN/LOSS FROM DAILY INCREMENTAL ACTIVITY FILE
320
(CONT. ON FIG.10C)

FIG.10B

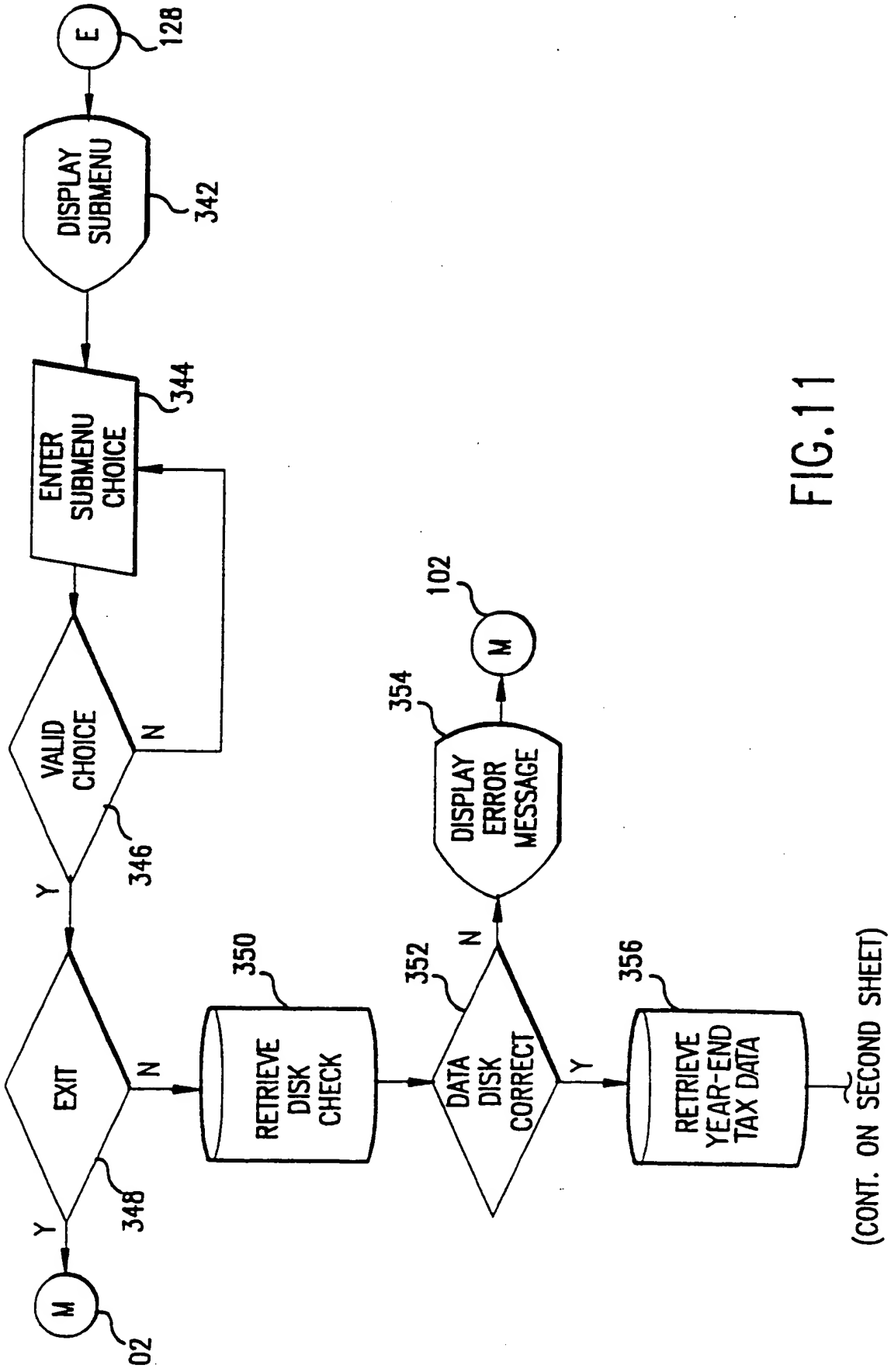
E
128
DISPLAY SUBMENU
342
ENTER SUBMENU CHOICE
344
VALID CHOICE
346
N
Y
EXIT
348
N
Y
M
02
RETRIEVE DISK CHECK
350
DATA DISK CORRECT
352
N
Y
DISPLAY ERROR MESSAGE
354
M
102
RETRIEVE YEAR-END TAX DATA
356
(CONT. ON SECOND SHEET)

FIG.11